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Adapting Cooperative Integrated Reading and Composition to Meet the Needs of Bilingual Students

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Introduction

Cooperative learning methods have been found to be considerably more effective than traditional methods in increasing basic achievement outcomes for gifted, average, and special education students, including performance on standardized tests of mathematics, reading and language arts, social studies, and science (Slavin, 1983; 1988; Joyce & Showers, 1980). Researchers have also found that cooperative learning structures promote higher self-esteem and greater motivation to learn. Self-esteem has been found to be significantly higher for all students in cooperative classrooms, but particularly for students at risk (Johnson & Johnson, 1988).

Cooperative learning has often been proposed for use with language minority students (California State Department of Education, 1986; Cohen & De Avila, 1983; Calderón & Marsh, 1988; Cummins, 1989). However, at present there is little controlled research on the effects of cooperative learning on language minority students. Kagan, Zahn, Widaman, Schwartzwald, and Tyrell (1985) studied two cooperative learning strategies in schools serving Mexican American and Anglo students, but the Mexican Americans involved were highly assimilated and were not limited in English proficiency. Elizabeth Cohen (1986) implemented a discovery-oriented science program, Finding Out/Descubrimiento, in bilingual and integrated classes, but has not yet presented findings in comparison to control groups of similar students. Clearly, there is a need for more rigorous evaluation of cooperative learning strategies as a means of increasing the achievement of language minority students (Slavin, 1988).

Teachers of language minority students across the nation are discovering the possibilities of cooperative learning. However, teachers are also finding that staff development and curriculum packages on cooperative learning need to be adapted to meet the needs of language minority students. Cooperative learning models cannot be used as developed for native English speakers. They must be modified to integrate effective bilingual/English as a Second Language practices.

Background of the Research Project

Because cooperative learning appears to be such a promising approach and is in need of being tested in bilingual classrooms, the federal government funded a five-year project to study the effects of cooperative learning on linguistic, academic, and social skills development of limited English proficient (LEP) students.

The five-year project described here is currently in its second year of implementation. A multidisciplinary team of researchers from Haifa University, Johns Hopkins University, University of California at Santa Barbara, and the University of Texas at El Paso are working with teachers to develop a process for effective bilingual teaching. The study is being conducted in the Ysleta Independent School District in El Paso, Texas and Goleta, California with replication sites planned in San Antonio and Tornillo, Texas and Honolulu, Hawaii. The results reported here are from the Ysleta school district.

This article first describes CIRC (Cooperative Integrated Reading and Composition), the cooperative learning structure used as the basis for designing a cooperative learning model appropriate for language minority students. Next, the Bilingual CIRC model is described together with its key features and the integration of first and second language acquisition theory and practices. Last, preliminary findings are reported.

Methodology

The results represented here are based on analysis of student writings, video recordings of student discourse, and interaction patterns during the various phases of the CIRC model, classroom observation instruments, video recordings of teacher-directed instruction, teachers conducting peer-coaching and interacting in their study groups, and teacher questionnaires. These data were analyzed through an ethnographic approach, following the criteria for classroom observations and note taking defined by Goetz and LeCompte (1984). Patton's (1980) approach to informal and interview-guide-approach interviews was used with the teachers on a monthly basis. Video tapes of teacher-student and student-student discourse were analyzed through an interactive sociolinguistic approach like that described by Gumperz (1986), Cook-Gumperz & Gumperz, (1982), and Green and Wallat (1981) which focused on the interplay of communicative competence, participation structure, and conversational inference.

During the first year of the project, an assessment instrument, designed to assess the following major components of the bilingual CIRC, was also developed and field tested: reading comprehension, story retell, spelling and grammar, meaningful sentences, story related writing, and creative writing. Results from the students' pre and posttests are in the process of being analyzed.

Target Participants. The study involved 12 experimental classrooms and 12 control classrooms: three second grade, three third grade, and three fourth grade bilingual classrooms in seven schools in the same district. Twenty four teachers

81

and approximately 400 students are participating in the study at this time. The classrooms were matched for socio-economic levels, students' achievement, and school environment. Gifted bilingual, regular bilingual, and low-performance bilingual classes are matched one on one.

Program Structures. Both control and experimental teachers spent approximately one and one half hours daily on reading and language arts instruction. The experimental teachers implemented the bilingual CIRC cycle during this time block. All experimental teachers were involved in developing and testing the model. Teachers in the control classrooms did not receive training on CIRC but on some other cooperative learning strategies. The control teachers used more traditional reading instruction methods such as round-robin, oral reading, and workbook practice activities. They also conducted ESL instruction as a separate 30 minute block using a packaged curriculum.

The second, third, and fourth grade levels were selected for this part of the study for several reasons. The district functions under the bilingual transitional bilingual model, providing students with intensive instruction in L_1 in grades K, 1, and 2. Reading and writing in L_2 are initiated in the middle of the second grade, using the Macmillan Transitional Reading Program. The transitional program is used throughout the third grade with continued instruction in Spanish reading using the *Campanitas de oro* reading series. By the fourth grade students are reading and writing in both English and Spanish.

In second grade, teachers in the experimental classroom incorporated the bilingual CIRC model using Spanish reading material during the first semester. During the second semester, they alternated between English and Spanish reading materials in two week intervals using CIRC. Teachers in the control classrooms used the same instructional materials, alternating between English and Spanish daily, and did not incorporate CIRC.

In the third grade, the experimental teachers spent the first two or three months on CIRC in Spanish and, thereafter, alternated between two weeks in English using the transitional program and two weeks in Spanish. The teachers in the control classroom alternated daily between Spanish and transitional English and did not use CIRC.

In the fourth grades, teachers in the experimental classroom began with two weeks in Spanish and two weeks in English using CIRC for the first 2-3 months. Thereafter, the format was four weeks in English and two weeks in Spanish using CIRC. The control teachers alternated daily between English and Spanish, spending on the average 70% more time on English.

The Original CIRC Model

Cooperative Integrated Reading and Composition (CIRC) was originally developed to be used with monolingual English students by the Johns Hopkins researchers (Stevens, Madden, Slavin, & Farnish, 1987). It consists of a variety of instructional practices which develop social, academic, and communication skills. The principal features of CIRC stem from an analysis of recent research on effective reading, writing, and language instruction. The CIRC program consists of three principal elements: direct instruction in reading comprehension, Treasure Hunt activities, and integrated language arts and writing. Treasure Hunts are worksheets that include comprehension questions, prediction guidelines, new vocabulary to be learned, story retell, and story related writing suggestions. In all of these activities students work in heterogeneous learning teams of four and in dyads. All activities follow a series of steps which involve teacher presentation, team practice, independent practice, peer preassessment, additional practice, and testing (Stevens, Madden, Slavin, & Farnish, 1987).

The Adaptation of CIRC

CIRC was selected as the model to be adapted to bilingual instruction because of its highly interactive nature and because it would enable bilingual teachers to manage their English, Spanish, and transitional literacy activities in an effective and efficient manner.

In adapting the CIRC model for bilingual instruction, several factors had to be considered: (a) extensive teacher staff development, from a constructivist approach where the teachers became researchers and collaborators in all adaptation phases; (b) integration of first language development principles, theories, and practices; (c) integration of second language acquisition principles, methods, strategies, and techniques; (d) integration of principles, methods, and techniques for transitioning students from L_1 to L_2 reading and writing; and (e) adoption of a student centered, constructivist philosophy, focusing on student and teacher empowerment.

Bilingual CIRC. The key elements and steps of the original CIRC model are the same. However, several instructional strategies which have been found effective in teaching reading and writing in both L_1 and L_2 to bilingual students have been incorporated into the bilingual CIRC model.

CIRC and Primary Language. With the integration of first language theory and practice, CIRC took on a whole language view of learning which integrated

student experiences with exciting pieces of literature directed at developing high levels of reading and writing proficiency (Calderón, 1990; Cummins, 1990).

CIRC for ESL and Transition into English. For LEP students, CIRC offered a Natural Approach (Krashen, 1981) rich in language experiences that integrated speaking, listening, reading, and writing. The activities tapped the students' cultural background and made these experiences meaningful, relevant, and interesting to them. More important, the extensive interaction from the CIRC activities helped students develop fluency and comfort with English.

When students began the transition phase into English, the teaching strategies used allowed them to tackle increasingly complex material, thereby building their English vocabulary and helping them gain fluency, confidence, and independence in reading. The CIRC strategies coupled with innovative transitional and ESL strategies maximized the learning opportunities for students. Thus, students quickly realized they were active participants, and their ideas were valued and encouraged by peers and teachers. Since students first learned the CIRC process through their reading in the primary language, they could concentrate on enjoying the stories in English, not having to worry about guesswork or classroom procedures.

CIRC for Developing Critical Thinking. During CIRC activities LEP students learned how to solve problems, study together, help each other, solicit opinions, present rationale, defend, synthesize, listen to others, and ask relevant questions. After each activity, LEP students learned how to talk about their thinking strategies and how to improve for next time.

Instructional Materials. The instructional materials used by the district for teaching reading in Spanish and for transitioning students from reading in the native language to English served as the basis for developing the Bilingual CIRC model. Both the Macmillan Spanish Reading Program, *Campanitas de oro* (Tinajero, et al., 1987) and Macmillan's Transitional Reading Program, (Tinajero & Long, 1989) incorporate innovative instructional strategies and techniques found to be effective for teaching both the native language and English and for facilitating transition from L_1 to L_2 reading. The strategies of developing background and a concept approach to vocabulary building, for example, as well as the integration of the language arts are important features of both of these programs. The transitional program incorporates whole language, English as a second language, and cooperative learning strategies. Shared reading, previewing, story mapping, character mapping, and story related writing are important features of the transitional program. The Campanitas de Oro strategies and activities, as well as other cooperative learning strategies and best practices from first and second language theories and teaching methods, were integrated with

84

those of the original CIRC and resulted in the design of the Bilingual CIRC model.

The expected outcome in the implementation of the Bilingual CIRC is to promote higher student achievement by promoting more social and academic interactions inherent in CIRC combined with effective bilingual practices. Through CIRC children are introduced to new patterns of thought when they engage in dialogues with their peers. The verification of ideas, the planning of strategies for task completion, the protocols of politeness, consensus seeking, compromising, and the symbolic representation of other intellectual acts are enacted through peer communication (Palincsar, 1987; Vygotsky, 1978). The more a child is exposed to cooperative peer exchange, the more the child's own thinking becomes refined. The Bilingual CIRC allows for this type of interaction in both the L_1 and L_2.

Figure 1 provides a comparison between the original CIRC and the Bilingual CIRC and summarizes the important features and instructional strategies inherent in the latter. These features and strategies will be discussed in more detail in the next section.

Features and Strategies of the Bilingual CIRC

This section describes the principle features and instructional strategies inherent in the bilingual CIRC model. These features and strategies are integrated within a lesson cycle which consists of three phases: Phase I: Activities Before Reading; Phase II: Activities During Reading; and Phase III: Activities After Reading. The interactive structures for each feature or strategy are also identified.

PHASE I: Activities Before Reading

1. Building Background and Vocabulary. Interactive structures: Whole class/small groups with teacher; Teams of 4.

This feature of the Bilingual CIRC is based on the premise that the more familiarity a reader has with the content and language of a selection to be read, the easier it is to understand it. To build familiarity with content, it is necessary not only to fill voids of information but also to minimize cultural and vocabulary gaps. For example, without proper background development, a Hispanic child may have difficulty understanding a story about a grandmother in a nursing home because elderly people usually stay within the child's family.

To provide appropriate background for students, teachers are encouraged to

survey the selection students are to read and to identify content and language that may be unfamiliar to them. By conducting a brain storming activity with the whole class, the teacher is able to assess prior knowledge of vocabulary and concepts. The teacher writes on chart paper using a word or concept from the upcoming lesson as the center of a semantic map. Students' responses will indicate how much knowledge they possess about a given topic in the selection to be read and reveal areas that will need development. By recording the brainstorming session on paper and displaying it, the teacher provides a common reference point for the students when they read and discuss the lesson in teams. The teacher might then conduct a discussion and activities around extended family concepts vs. visiting the elderly at a nursing home.

Team building activities are often incorporated during the background building activities. For example, if a story is about a hummingbird, students begin by developing a team poster on birds. The team names match their poster. The purpose of this activity is to generate discussion around the topic of birds and to build a cognitive and factual knowledge base about the upcoming selection. At the same time, learning becomes a cooperative, highly interactive venture. This activity creates a positive learning environment in which students value one another's contributions and team participation. In addition, the secure and supportive environment motivates the students to take risks. This use of the story's theme teaches students to work together, builds unity and appreciation for one another's talents, contextualizes the selection, and identifies content and language that may be new to the students.

This thematic approach also facilitates the teaching of vocabulary. Themes allow students to associate words with a topic and to make connections between words. Key concepts are developed, rather than just isolated word meaning. When all the selections in a teaching unit are related by the same theme, as they are in the Campanitas de oro reading series (Tinajero, et al., 1987), the vocabulary and concepts developed for one selection become background and knowledge for the next selection. As students develop background for the selection, they simultaneously develop essential vocabulary. With this concept development approach for teaching vocabulary, learning is faster and more effective: students become aware of how newly acquired words fit within their semantic repertoire. Furthermore, this thematic approach can be carried into the content areas. For example, when a reading selection was about a bird, one teacher introduced a science chapter on birds that afternoon, and her geography lesson tracked flight patterns of certain birds.

2. Making Predictions. Interactive Structures: Whole class or small groups with teacher; teams of 4; whole class.

This CIRC feature engages students in making predictions and in working through the process of confirming and rejecting those predictions. For example, beginning with the title of a story and its illustrations students are asked to predict what they think the story will be about. Another variation is to use the title of the story together with the target vocabulary as a basis for making predictions.

Usually, predictions are first generated through a whole class discussion. Students may then work in groups of four to formulate their predictions. Finally, one child acts as a recorder, and with the help of the group, writes a prediction. If consensus is not reached on one prediction, several predictions may be generated by the group. Later on in the CIRC process, students are asked to read a story up to a certain point and then to stop and make predictions before reading the remainder of the story. Asking students to make predictions appears to entice them to read the story more carefully, to stay on task, and to use context clues more effectively as they work through the process of confirming or rejecting their predictions. Furthermore, students appear to remember events in the story better since those events were discussed when they were asked to make predictions.

3. Previewing a Selection. Interactive structures: Whole class with teacher.

Silent reading in the original CIRC was replaced with shared reading in the Bilingual CIRC to provide students with additional support prior to reading the selection on their own. During shared reading the teacher reads aloud a story as students follow the text using Big Books or their textbooks. During subsequent reading, students are encouraged to chime in and to read aloud with the teacher.

In the Bilingual CIRC, shared reading activities are conducted in both English and Spanish. As the teacher reads aloud, students hear the flow of the language and listen to its rhyme and natural rhythm. This oral activity also helps students understand the selection they are about to read. They then use this knowledge of the story to help them decode unknown or difficult words. Reading aloud to students is particularly important during L_2 reading. As the teacher reads, students track and begin to make connections between the written and oral forms of the language. Students also hear and practice, in an enjoyable group setting, the pronunciation of English words and the rhythm and structure of the language.

2.Partner Reading
Interactive structures: Dyads.

For partner reading, students sit side by side in pairs and take turns reading stories aloud. At first partners read through the story alternating sentences. Weeks later, they are ready to alternate between paragraphs or pages. Often, partners track the text for one another using their index finger. Through partner reading, students learn to assist each other with the pronunciation and decoding of words. As students work through the text, a special helping bond develops among and between students. Reading aloud becomes an enjoyable and interactive experience which helps students develop fluency and confidence in their ability to read.

An important consideration in partner reading is the pairing of students. In this project, teachers were first asked to rank students as high, medium, or low according to students' reading ability. Partners were then grouped as follows: high with medium; medium with low. These four then became a team.

Another important consideration in partner reading is modeling. Teachers first role play partner reading with several students. Next, students role play reading in pairs while the teacher provides guidance and feedback on the helping strategies. The emphasis is on developing strategies for helping one's partner read and correct errors.

3.Treasure Hunt: Story Comprehension
Interactive structures: Dyads; teams of 4; whole class/small groups; individuals.

During this step, students first discuss with their reading partners the responses to a list of questions about the story listed on a sheet referred to as a Treasure Hunt. Treasure Hunts are often divided into Part 1 and Part 2, each part consisting of 5 or 6 questions each. Often, the Treasure Hunt calls for students to make a prediction after Part 1 and again after Part 2. Students work together and help each other understand the questions, look up the answers if necessary, look for clues to support their answers, make inferences and synthesize, and reach consensus.

Next, students come together in teams of four. At this point the teacher conducts a Numbered Heads Together activity. That is, each group of students number off from 1-4. The teacher then asks a question and gives the students time to discuss the answer. Each team of four makes sure that everyone in the group knows the response to the question. The teacher then calls out a number--2, for example. All the number two's stand up. The teacher calls on any one of

the students to answer the question. Where Partner Reading ensures oral fluency for all students, the Numbered Heads Together activity ensures comprehension of the story elements by all students.

After the oral processing of information, students write their own answers to the questions on the Treasure Hunt sheet. A similar interactive process takes place to arrive at predictions. The predictions are shared, tested, and new hypotheses are made with the total class.

4.Story Mapping
Interactive structures: Teams of 4

After students have read and discussed the selection, they proceed to map the story. A story map is a special type of visual aid used to organize the contents and ideas in the story. Using this graphic organizer the students work in small groups to map out the story. The names of characters, the setting, the main ideas, the events of the story, and the ending of the selection are all cooperatively determined and written on the map. The teacher may also use a story map when previewing a selection.

Story mapping engages students in a variety of mental processes as they discuss and organize the story. Students see the knowledge they are activating and the labels used to express those concepts. This activity helps students to better understand and remember the various events in the story.

Story mapping has three main purposes: (a) it anchors the story grammar: main idea, characters, sequencing of events, conclusion; (b) it gives visual clues for students to practice their Story Retell phase (which flows more smoothly and becomes extensively longer and more accurate when students do their story maps); (c) the students learn to use mapping strategies for doing their own creative writing.

5.Story Retell
Interactive Structures: Dyads or teams of 4; Storyteller to whole class.

After the story mapping activity, students proceed to the Story Retell phase of the lesson cycle. Again, this activity is interactive, providing students with the opportunity to work closely with a partner. Students sit with a partner, face to face, and take turns retelling the story without looking at the text. Students are encouraged to retell the story with as much fidelity and detail as possible. Partners learn to probe or cue one another as they take turns telling the story and helping the storyteller.

Before students do this activity on their own, teachers are encouraged to role

play the Story Retell activity with several students, paying special attention to probing and cuing strategies so that the retelling is as accurate and as complete as possible. Next pairs of students are asked to role play while the teacher provides guidance and feedback on the interaction. The teacher then moves around the room helping students practice with their partners. Afterwards, students discuss with their partners what they liked about the story. Storytellers can go to the podium and tell the stories to the whole class. This helps the storytellers fine tune their speech skills and also model for other students the art of storytelling.

6.Story Related Writing
Interactive Structures: Dyads; teams of 4; individually.

This part of the lesson cycle calls for students to engage in a variety of writing activities that are related to the selection just read. Working with a partner or in small groups, students generate a variety of peer-edited books which are a result of interaction among students. Students learn to help each other develop story-lines and characters, sequence events, plan mechanics of putting the book together, give each other feedback and build upon each others' ideas. These interactions culminate in a variety of student-published materials--an adaptation of the selection just read or a retelling of the story with a different ending.

Related Activities

The following are important components or features of both the original CIRC and the Bilingual CIRC and are conducted throughout the lesson cycle.

1.Words Out Loud and Spelling
Interactive structures: Dyads; individually.

Words from the story become word banks to be learned and mastered. In this activity, the teacher preselects 10-12 words (depending on the grade level) from the story that students must be able to read fluently, spell, and use correctly in meaningful sentences. Through a variety of interactive activities, students help one another to master the new words. For example, students pretest each other on the spelling words using a "disappearing list" strategy to help one another. Students test each other and then make a new list of misspelled words after each assessment. They repeat this process as many times as necessary until the list disappears. As children work with one another they discuss strategies for remembering the spellings of words and their meanings. They also practice

praising and encouraging each other as they learn new words.

2.Partner Checking
Interactive Structures: Dyads; Teams of 4

After students complete the activities listed above, their partners initial the Student Assignment Form indicating that they have completed and achieved criteria on that task. Students are given daily expectations about the number of activities to be completed, but they can learn at their own rate and complete the activities earlier if they wish, creating additional time for independent reading of other children's books on the same theme or their own favorite readings. This phase of the lesson cycle also provides opportunities for student interaction. As students proceed through the partner checking activities, they discuss their assignments, assess whether or not the various tasks have been completed, and plan how they will proceed. The partners have a vested interest in making sure all students complete their work correctly since the total individual scores become the team's scores.

3.Word Meaning
Interactive Structures: Dyads; Teams of 4

The meanings of five or more carefully selected words in the story are discussed and used as a basis for writing meaningful sentences which show the definition and a clear picture of the meaning of the word such as "An octopus grabbed the swimmer with its eight long legs" as opposed to a sentence that students often generate: "I have an octopus" in which the word octopus is substitutable with numerous other words.

Writing meaningful sentences often requires a great deal of discussion and interaction among students (and the teacher) as they explore various possibilities for generating good sentences. Student dyads learn how to integrate word definitions with their own ideas and how to evaluate and refine their sentences using criteria for meaningful sentences. Usually, teachers spend several months modeling this phase through whole class presentations. Students then practice meaningful sentences in teams, then with partners, then individually.

4.Tests
Interactive structures: Individually.

At the end of three class periods, students are given a comprehension test on the story. They are asked to write meaningful sentences for each vocabulary word and to read the word list aloud to the teacher. Students are *not* permitted

to help one another on these tests. The test scores and evaluations of the story-related writing are the major components of students' weekly team scores. These tests are the culmination of a variety of interactive strategies which involve students in day-to-day activities of the CIRC process while providing them with the means to participate fully in them.

5.Direct instruction in reading comprehension
Interactive Structures: Whole class; small groups; one on one.

Throughout the lesson cycle, the teacher conducts direct instruction in reading comprehension skills as suggested in the basal reading program, such as identifying main ideas, drawing conclusions, and comparing and contrasting. In the instructional materials used in this study, the story line and events in the selection determined the point at which these comprehension skills were taught.

6.Writing Workshops
Interactive Structures: Whole class; small groups; dyads; individual.

These workshops consist of a series of mini lessons on the writing process. The teacher provides step-by-step explanations and ideas for completing a writing assignment. Students work closely with the teacher and work through prewriting, writing, revising, and editing activities. Peer-revision and peer-editing activities provide multiple opportunities for students to work with each other, to provide each other with feedback and ideas for improving their drafts, and to encourage and praise one another.

7.Independent reading
Interactive Structures: Individual and with parents, family or friends.

During independent reading activities, students are asked to read a trade book of their choice every evening for at least 20 minutes. Parents are encouraged to discuss the readings with their children and to initial forms indicating that students have read for the required time. Students earn points for their team if they submit a complete form each week. Students who complete at least one book report every two weeks can earn additional points. Independent reading and book reports replace all other homework in reading and language arts.

In summary, CIRC allows for several types of interactive activities which build upon reading, writing, speaking, listening, and thinking skills in two languages. The cuing systems of language (phonology, orthography, morphology, syntax, semantics, pragmatics) are always simultaneously present and interacting in any instance of language use. Thus, language development is being integrated

all the time. Additionally, as children discuss and create meaning with one another, they share their valuable background knowledge and experiences.

Results

In the true sense of collaboration, teachers and researchers have come together to create, study, refine, and renovate instructional practices that begin to address many issues yet unresolved in multilingual settings. The following issues have been addressed so far through the CIRC project: classroom management, physical organization of the classroom, orchestrating the learning task, teachers as instructors and communicators, students as social and academic members of the classroom, reading and writing in two languages, transition from first to second language, enhancing student and teacher self-esteem, peer-coaching, and teacher support groups that advance teachers' implementation and research skills. We have limited our discussion in this paper to a description of the Bilingual CIRC Model and its various features as well as to some preliminary findings. In general, preliminary results show that as compared to the control group, the students in the experimental bilingual CIRC classrooms had greater reading and writing outcomes in both English and Spanish.

Reading and Writing Skills Development. Nine of the twelve CIRC teachers had students who placed first, second, or third in the schools' writing contests. The most interesting feature of this event is that the limited English proficient students in these twelve classrooms out-performed regular English or bilingual students in other classrooms at their grade level in terms of writing. Using a series of assessment instruments developed by researchers to measure the specific CIRC structures, the following observations were made:

1. The quantity and quality of the writing samples were superior for students in the experimental classrooms. For example, students wrote longer and more comprehensive narratives, with much more detail and accuracy of events. They also exhibited a greater variety of genre in their writing. Their narratives reflected greater comprehension of the story elements and greater retention of the story line, character descriptions, and character motives.

2. Comprehension questions and answers reflected greater comprehension of specific story elements, such as sequencing, main idea, author's intent, story problem, and solution.

3. Longer and more meaningful sentences were generated by these students.

4. For the story retell, students had more meaningful story retellings and more

93

extended peer discussions on the merits of the stories.

Social Skills Development. Analysis of videotapes revealed that students in the experimental classes had more accurate helping discourse, peer helping strategies, and cooperation skills. Finally, students were much more self-confident in both public speaking and classroom speaking.

Perhaps one of the most important outcomes of this project has been the creation of a different environment for the limited English proficient students. Through the development of interactive skills, social skills and helping skills which naturally developed in the experimental classrooms, students learned to value each other and concentrate on positive relationships. Throughout the year, as new LEP students came into the classrooms, they were immediately integrated into the teams. Surrounded by helpful peer teachers during every activity, LEP students quickly became confident, comfortable, and willing to take risks with language. The more risks they took, the quicker their language developed.

Transitional Skills Development. Another important outcome of this project has been the realization of the potential of CIRC, together with appropriate instructional transitional materials, to effectively facilitate LEP students' transition into the English curriculum. In this project, LEP children were able to reach high levels of language and academic preparation because they were allowed to use their primary language to learn the CIRC processes and procedures as well as the cognitive strategies that go with each activity.

The CIRC processes, for example, provided LEP students with numerous opportunities to read and write in both languages. CIRC's interactive nature provided endless opportunities for LEP students to express themselves in their native language as they brainstormed ideas and put their heads together in activities such as making predictions, mapping and outlining stories, and completing Treasure Hunts. This level of participation would have been impossible for LEP students in traditional English dominant classroom structures. But, in Spanish, LEP students had the opportunity to participate at a high level of thinking; they contributed to discussions, generated ideas, and interacted with non-LEP students at high levels of English proficiency.

Conclusion

The major implication from this study is that interaction strategies orchestrated through CIRC, coupled with the use of quality instructional materials, enable students to reach high levels of oral, reading, and writing proficiency in two languages. Students progress from reading and writing in their primary language

in the second grade to reading and writing in their first and second languages in the fourth grade. Learning the CIRC process and procedures through the language they know best allows them to transfer the social, academic, and cognitive skills into English reading and writing with much greater ease.

A second prevalent outcome was student engagement time. Guided interaction around meaningful and interesting tasks and interesting reading selections helped even the most reluctant learners become actively engaged in learning. The pleasure of peer interaction and power of peer pressure combined helped students construct knowledge and socio-interactional skills. The quality of learning increased for high-ability, medium, and low-ability LEP students when grouped heterogeneously in teams of four for tasks for which the original CIRC only required dyads. Even newcomers who arrived late in February, March, or April were quickly integrated into the instructional and schooling procedures because their three other peers made sure they blended in right away.

Working in teams of four provided LEP students with a wide variety of perspectives on how to complete a task and do problem solving. However, before students could partake of this freedom of choice, they had to be highly trained on group processes and helping behaviors. Teachers had to model and role-play the discourse for these processes frequently throughout the year.

The third major finding was self-confidence and respect for bilingualism. The exposure to different abilities with Spanish, English, or both, helped students value their abilities and see their achievements as positive. Being accepted, appreciated, supported, praised, and cheered by their peers and teachers seemed to have a profound impact on students' self-esteem. Next year, new instruments on attitudes toward learning and indicators of self-esteem will be administered in order to measure the extent of this teacher observation.

The fourth major finding is the improvement-of-practice gains. The concept of teachers as researchers collaborating with researchers to restructure the teaching, learning, and curriculum for bilingual students has been one of the most successful components of this project. Teachers have shifted from traditional reading circles, grammar-based writing, ESL drill on discrete skills to problem solving, and integrated language, reading, and writing. The implementation of this project required extensive time for teachers to observe, practice, learn, reflect, discuss, question, reorganize, and refocus their lessons. CIRC teachers met once a month for 2 hours with the researchers, two weeks of all-day sessions each summer, and 2-3 Saturdays during the year. In between these sessions, they observed each other's classroom teaching, gave feedback, and planned lessons together. The sessions with the researchers forced teachers and researchers to be more analytical about what was observed in classrooms. Teachers were

encouraged to raise questions about what was being taught, what was being learned, and to generate hypotheses about better approaches to each segment of CIRC. While the results of the teacher development component speak highly for this type of collaborative approach, the implication for schools is that teacher development and improvement-of-practice require a lot of teachers' time beyond instructional time. For an extended description of the staff development component of this study see Calderón (in press).

Based on the preliminary results of this study, the gains for LEP students and their teachers are clearly positive. It seems appropriate to conclude that these results suggest a classroom management for bilingual instruction which works for teachers and LEP students. With several more years to go, this study will continue to generate significant insights to further instructional improvement for LEP students.

Figure 1. CIRC and Bilingual CIRC Comparisons.

Components	CIRC	Day	Bilingual CIRC Adaptations	Day
Language of Instruction	English		• Spanish for L_1 reading • English for ESL and Transitional reading	
CIRC Reading Cycle	5 days		8 - 10 days	
Reading Material Used	English Basal Reading Program		• Spanish basal reading program • Literature books in L_1 & L_2 • Transitional Reading Program	
Team Configurations	Homogeneous language grouping		Heterogeneous grouping of LEPS with non-LEPS	
Phase I Before Reading Activities	Vocabulary Instruction: • rapid review procedure • words aloud practice • introduces & reviews meanings of words	1	Background building activities: •Theme-related team building activity •Language experience activities	1

Components	CIRC	Day	Bilingual CIRC Adaptations	Day
	• Story introduction and discussion • Making predictions • Confirm/reject predictions • Spelling pretest	1	• Integration of concept & vocabulary development • Words aloud practice • Brainstorming strategies • ESL techniques such as gestures, visual, facial expressions, elaborations • Story introduction and discussion • Making predictions and confirming/rejecting predictions are done throughout the cycle • Teams write a paragraph summary of the group predictions • Spelling pretest	2

Components	CIRC	Day	Bilingual CIRC Adaptations	Day
Phase II During Reading Activities	•Silent reading - Parts I and II	1	•Silent reading is not recommended at this stage • Teacher previews the selection • Story maps or other graphic organizers • Choral reading activities • Shared reading	3
	Partner reading: • Students work with a partner from the same reading group and the same team •Partners read the story orally, alternating •Students stop reading the story at the indicated place and work on the Treasure Hunt	1	Partner reading: • Pair LEP with non-LEP students during L_1 and L_2 reading •Partners read the story orally, alternating sentences first, eventually paragraphs •Partners use one textbook & track the text for each other • Partners stop reading the story at the indicated place and work on the Treasure Hunt	3-4

Components	CIRC	Day	Bilingual CIRC Adaptations	Day
	Treasure Hunt: • Partners discuss the answers to the questions before they write their answers • After finishing Section I of Treasure Hunt, partners continue reading then complete Section II	2	Treasure Hunt: • Teacher models discussion and writing patterns and writing • Numbered Heads Together in teams of four to check comprehension • After finishing Section 1 of Treasure Hunt, partners continue reading, then complete Section II • Teams do story or character maps	5
Phase III After Reading Activities	Word meaning practice • Students write a meaningful sentence for each of the words	3	Word meaning practice: • Extensive Teacher-student discussion to assist students in generating good sentences	6

Components	CIRC	Day	Bilingual CIRC Adaptations	Day
	• Partners check each others' sentences		• Students write meaningful sentences in teams first, then individually • Partners check each others' sentences	
	Words out loud practice: • Partners review together	3	Words out loud practice • Teacher reviews pronunciation for L_2 lists • Partners review together	6
	Story retell pretest: • Partners take turns answering the story retell questions asked by the other • Partners ask for more information when necessary	3	Story retell pre-test: • Partners take turns retelling the story • Partners ask for more information when necessary • Students retell the stories to teams or the whole class	6

Components	CIRC	Day	Bilingual CIRC Adaptations	Day
	Story related writing: • Before writing, students discuss their ideas with their partner • After writing, students share their writing with a partner and/or other classmates	4	Story related writing: • Before writing, students discuss their ideas with their partner • After writing, students share their writing with a partner or a classmate • An author's chair strategy is used to get feedback for revisions • After revisions and more peer-feedback, students get feedback from teacher • Peer-editing follows • Stories are published and disseminated	8-10

Components	CIRC	Day	Bilingual CIRC Adaptations	Day
	Reading Comprehension Lessons: • The teacher-directed lesson takes place in the reading groups where students are all at the same level • Partners work cooperatively on skills activities and check each others' work	5	Reading Comprehension Lessons: • The teacher-directed lesson takes place in small groups or whole class • Partners work cooperatively on skills activities and check each others' work	5-10
	Reading at Home: • Students are asked to read a favorite selection at home for 20 minutes each night	1-5	Reading at Home: • Students are asked to read a favorite selection at home for 20 minutes each night	1-10

Components	CIRC	Day	Bilingual CIRC Adaptations	Day
	Tests: • Reading Comprehension • Spelling • Word Meaning • Words Out Loud • Story Retell	3-5	Tests • Reading Comprehension • Spelling • Word Meaning • Words Out Loud • Story Retell	5-10

References

Calderón, M., & Cummins, J. (1981) *Communicative Competence in Bilingual Education: Theory and Research.* Dallas, TX: National Center for the Development of Curriculum.

Calderón, M. (1986) *Multi-district Trainer of Trainers Institutes: A trainer of trainers model focused on the acquisition of literacy by limited English proficient students.* A final report to the Secretary of Education, Discretionary Grants Division, Washington, DC.

Calderón, M. (1989) *Cooperative learning in bilingual settings.* Report to the Center for Research on Effective Schooling for Disadvantaged Students. Santa Barbara, CA: University of California at Santa Barbara.

Calderón, M., Tinajero, J., & Hertz-Lazarowitz, R. (1990) *Promoting student interaction for biliteracy development:* Bilingual Cooperative Integrated Reading and Composition. Paper Presented at the American Education Research Association, Boston, MA.

Cummins, J. (1989) *Empowering minority students.* Sacramento, CA: California Association for Bilingual Education.

Durán, R. (1990) *Reading achievement among language minority students.* Paper presented at the American Education Research Association, Boston, MA.

Goetz, J. P., & LeCompte, M. D. (1984). *Ethnography and qualitative design in educational research.* New York: Academic Press.

Green, J., & Wallat, C. (1981). *Ethnography and language in educational settings.* Norwood, NJ: Ablex.

Palincsar, A. S. (1987). *Collaborating for collaborative learning of text comprehension.* Paper presented at the American Education Research Association, Washington, DC, April, 1987.

Patton, M. W. (1980). *Qualitative research methods.* Beverly Hills, CA: Sage.

Sharan, S., & Hertz-Lazarowitz, R. (1980). *A Group-Investigation method of cooperative learning in the classroom.* In Sharan, S. et al., Cooperation in Education. Utah, BYU press, pp. 14-45.

Slavin, R. E. (1988). Technical Proposal. Center for Research on the Education of Disadvantaged Students. Baltimore, MD: The Johns Hopkins University.

Slavin, R. E., Karweit, N. L., & Madden, N. A.. (1989). *Effective programs for students at risk.* Needham Heights, MA: Allyn and Bacon.

Slavin, R. E., Calderón, M., Durán, R., Hertz-Lazarowitz, & Tinajero (1990). *Preliminary reports from the National Center for the Study of Education for Disadvantaged Students.* Baltimore, MD: Johns Hopkins University.

Stevens, R. J., Madden, N. A. Slavin, R. E., & Farnish, A. M. *Cooperative Integrated Reading and Composition.* Baltimore, MD: Center for Research on Elementary and Middle Schools, Johns Hopkins University.

Tinajero, J. et al., (1987). *Campanitas de oro, Spanish Basal Reading Program,* NY: Macmillan Publishing Co.

Tinajero, J., & Long, S. (1989). *Going Places, Stepping Stones,* Macmillan Transitional Reading Program. NY: Macmillan Publishing Co.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes.* (M. Cole, V. John-Steiner, S. Scribner, & E. Souberman, Eds. and Trans.) Cambridge, MA: Harvard University press.